

THAT WHICH IS CLAIMED IS:

1. A biologically pure bacterial strain for bioremediation of petroleum hydrocarbons comprising an isolate selected from the group consisting of ATCC accession numbers PTA-5570, PTA-5571, PTA-5572, PTA-5573, PTA-5574, PTA-5575, PTA-5576, PTA-5577, PTA-5578, PTA-5579, PTA-5580, PTA-5581 and combinations thereof.
2. A process of bioremediation of petroleum pollutants from a soil environment comprising the steps of:
 - providing a supply of a contaminated soil having a petroleum pollutant;
 - introducing into said supply of contaminated soil at least one bacteria isolate which metabolizes constituents of the petroleum pollutant and which further produces a biosurfactant; and,
 - providing adequate nutrients for a treatment time sufficient for the pollutant utilizing isolate to degrade the petroleum pollution.
3. The process according to claim 2 wherein said concentration of petroleum pollutant within said soil is less than about 100 ppm total petroleum hydrocarbons after treatment with the at least one bacterial isolate.
4. A process of treating a mixed waste of soil contaminated with a heavy metal pollutant and a petroleum pollutant comprising the steps of:
 - providing a supply of a contaminated soil containing a heavy metal pollutant and a petroleum pollutant;
 - introducing into said supply of contaminated soil at least one bacterial isolate which metabolizes a constituent of the petroleum pollutant and which further produces a biosurfactant; and,
 - periodically removing a portion of the produced biosurfactant from said supply of soil, said biosurfactant containing therein either a portion of said heavy metals or said petroleum pollutants; and,
 - repeating said step of removing a portion of said surfactant until said heavy metal concentration is reduced to a target value.

5. The process according to claim 2 wherein said supply of a contaminated soil further contains a low-level radioactive waste.
6. The process according to claim 2 wherein said step of introducing an isolate further comprises adding an isolate selected from the group consisting of ATCC accession numbers PTA-5579, PTA-5580, and PTA-5581 and combinations thereof.
7. The process according to claim 4 wherein said step of introducing at least one bacterium isolate further comprises adding an isolate selected from the group consisting of ATCC accession numbers PTA-5579, PTA-5580, and PTA-5581 and combinations thereof.
8. A process of treating a soil containing low-level radioactive material and petroleum hydrocarbons comprising the steps of:
 - providing a supply of contaminated soil containing a radioactive waste and a petroleum hydrocarbon;
 - introducing into said supply of contaminated soil at least one bacterial isolate which metabolizes a constituent of the petroleum hydrocarbon and is selected from the group consisting of ATCC accession numbers PTA-5570, PTA-5571, PTA-5572, PTA-5573, PTA-5574, PTA-5575, PTA-5576, PTA-5577, PTA-5578, PTA-5579, PTA-5580, PTA-5581, and combinations thereof which metabolize a constituent of the petroleum hydrocarbons; and,
 - treating said supply of contaminated soil until a treated concentration of said petroleum pollutant is less than about 100 ppm total petroleum hydrocarbons.
9. The process according to claim 8 wherein said at least one bacterial isolate further comprises an isolate selected from the group consisting of ATCC accession numbers PTA-5579, PTA-5580, and PTA-5581, and combinations thereof.
10. The process according to claim 2 wherein said petroleum pollutant includes polyaromatic hydrocarbons.

11. The process according to claim 10 wherein said polyaromatic hydrocarbons further includes polyaromatic hydrocarbons selected from the group consisting of 2-ringed, 3-ringed, and 4-ringed polyaromatic hydrocarbons and combinations thereof.
12. The process according to claim 8 wherein said at least one bacterial isolate additionally produces a surfactant during bioremediation conditions.
13. The process according to claim 12 comprising the additional step of periodically removing a portion of the produced surfactant from said supply of contaminated soil.
14. The process according to claim 4 wherein said petroleum pollutant further includes polyaromatic hydrocarbons.
15. The process according to claim 14 wherein said polyaromatic hydrocarbons further includes polyaromatic hydrocarbons selected from the group consisting of 2-ringed, 3-ringed, and 4-ringed polyaromatic hydrocarbons and combinations thereof.